DCCUMENT RESUME

ED 036 635 VT 010 295

AUTHOR LCREEN, C. C., CCMP.
TITLE SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION, PACIFIC REGION, 1968-69. AN ANNOTATED BIBLIOGRAPHY OF STUDIES IN AGRICULTURAL EDUCATION.
INSTITUTION AMERICAN VOCATIONAL ASSOCIATION, WASHINGTON, D.C.
PUB DATE DEC 69
NOTE 33P.

EDRS PRICE EDRS PRICE MF-$0.25 HC-$1.75
DESCRIPTORS *ABSTRACTS, *AGRICULTURAL EDUCATION, *ANNOTATED BIBLIOGRAPHIES, *EDUCATIONAL RESEARCH, MASTERS THESES, *RESEARCH PROJECTS

ABSTRACT

THIS COMPILATION OF RESEARCH IN AGRICULTURAL EDUCATION INCLUDES STUDIES COMPLETED DURING 1968-69 IN THE EIGHT STATES OF THE AMERICAN VOCATIONAL ASSOCIATION PACIFIC REGION. ONE STAFF STUDY AND 24 MASTERS THESES ARE SUMMARIZED BY LISTING THEIR PURPOSE, METHODOLOGY AND MAJOR FINDINGS. STUDIES IN PROGRESS, NOT COMPLETED DURING THE 1968-69 YEAR, ARE APPENDED. STUDIES COMPLETED DURING THE PREVIOUS YEAR ARE ANNOUNCED IN RESEARCH IN EDUCATION, APRIL 1969 AS ED 024 832. (DM)

ED036635

Roy Butler

SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION

Pacific Region, 1968-1969

An Annotated Bibliography of Studies in Agricultural Education

Agricultural Education
Washington State University
Pullman, Washington

December, 1969

VT010295

ED036635

SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION

PACIFIC REGION

1968-69

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Compiled by
C. O. Loreen, Professor
Agricultural Education

Issued at

Agricultural Education
College of Education
Washington State University
Pullman, Washington

December 1969

INTRODUCTION

This compilation of research in agricultural education includes 25 studies completed during 1968-69 in 8 states in the Pacific Region.

All studies submitted by teacher educators are included in this report although some may not meet the criteria that were established for the selection of studies for the U.S. Office of Education publication, Summaries of Studies in Agricultural Education.

The compilation of abstracts of research in agricultural education is an activity of the Research Committee of the Agricultural Education Division of the American Vocational Association.

C. O. Loreen
Pacific Region Representative
Research Committee
Agricultural Education Division
AVA

December 1969

TABLE OF CONTENTS

	Page
Summaries of Studies, 1968-69	1
Studies in Progress, 1968-69	26
Subject Index: Summaries of Studies, 1968-69	29

BATEMAN, CHARLES J. The Need For A Veterinary Technician Program in Montana. Master's Report, M.S., 1969, Montana State University, 51 p. Department of Agricultural Education, Montana State University, Bozeman.

Purpose. -- The purpose of the study was to determine if there is a need for a Veterinary Technician Training Program in Montana to provide training for individuals interested in becoming Veterinary Technicians.

Method. -- Questionnaires were sent to all Head State Supervisors of Agricultural Education to determine the extent to which Veterinary Technicians Programs were being offered throughout the United States. A second questionnaire was sent to 103 Montana Veterinarians requesting information relative to the need for Veterinary Technician Programs within the state.

Findings. -- Of the fifty-two states reporting, thirteen indicated they had attempted to establish Veterinary Technician Programs. Eight states still had programs in operation at the time the study was completed. Data from fifty-nine Montana Veterinarians indicated: (1) general practitioners offer the most employment opportunities, (2) full-time and part-time employment in Montana will be open to 35 qualified technicians by 1971, (3) salaries for Veterinary Technicians would range from a high of $550.00 per month to a low of $250.00 per month with the modal salary being $400.00 per month, (4) D.V.M.'s felt license requirements would be necessary, (5) requirements for becoming a Veterinary Technician should be based on successful completion of minimum schooling, internship, and a final test, and (6) a majority of the D.V.M.'s favored a Veterinary Technicians Program in Montana.

BECK, JAMES H. A Study of the High School Supervisors of Vocational Education in the State of Washington. Thesis, M.S., 1969, Washington State University. 68 p. Washington State University, Pullman.

Purpose. -- This study identified the duties and qualifications of the high school supervisors of vocational education in the state of Washington. Information concerning recommended qualifications of a vocational supervisor and the size of the school districts having vocational supervisors was also accumulated.

Methods. -- Questionnaires were sent to the superintendents and to the vocational supervisors in twenty-four school districts. The superintendents and supervisors were asked to supply school information, qualifications desired in a new supervisor, and the duties of the supervisor. Questionnaires were also sent to five teachers in each district whose supervisor had replied. They were asked to reply to questions concerning the duties of the supervisor and progress in the department resulting from his presence.

Findings. -- This study indicated that having a full-time vocational supervisor is most feasible in those schools with an enrollment of over 2,000 secondary students. The vocational supervisor should have five to ten years of teaching experience in vocational education, have a bachelors degree, and have some special training toward supervision. Most of the vocational supervisor's time is spent with administrative responsibilities.

This study also found that there was a great deal of agreement between the superintendents, vocational supervisors, and the Washington State Plan for Vocational Education, as to what the supervisor's duties should be. There was a general lack of understanding of the supervisor's duties by the teachers.

The author recommended that vocational supervisors work toward better communications with their teaching staff. An additional recommendation was that the colleges provide special training for vocational teachers desiring to become vocational supervisors.

BORGEN, WAYNE HENRY. A Study Comparing the Variable Cost and Gross Income for Dry Pea Production and Spring Barley Production in Latah and Nez Perce Counties, Idaho. Thesis, M.S., 1969, University of Idaho, 45 p. Library, University of Idaho, Moscow.

Purpose -- The purpose of the study was to obtain information regarding the variable cost and gross income for the two most common spring crops in Latah and Nez Perce Counties, Idaho -- Spring barley and dry peas.

Method -- Forty cooperating farmers in Latah and Nez Perce Counties agreed to keep a diary system of records on one field producing a spring crop for the crop year of 1967. The data obtained for this study were based on these farm records kept for spring barley and dry peas.

Findings -- Gross returns for peas were considerably higher than barley. Even with higher production cost and labor output, peas showed a larger net profit to the farm operator.

Land values were high when compared to returns from crops produced on it. The larger farmers indicated greater willingness to spend more for machinery, fertilizer, spray operations, and other production cost, which resulted in increased yields and gross profits and ultimately increased net profits.

DALLEY, JAY W. Alternative in Farm Machinery Management on Juab County Dry Farms. Thesis, M.S., Utah State University. 42 p. Utah State University, Logan.

Purpose. -- The purpose of the study was to obtain first hand information on the amounts, types, sizes and the seasonal use of machinery being used in Juab County.

Method. -- A random sample of farmers were selected to supply information on a questionaire pertaining to machinery management in this county.

Finding. -- Part-time farmers in Juab County own as much machinery as full-time farmers. Some very expensive machinery needed on the dry farms has very limited use during the normal season. There is great need for a concentrated effort to purchase machinery cooperatively in this area. The possibility of a machinery rental service for specialized equipment should be considered. It is not economically sound to purchase all of the machinery needed for operation during a season on an individual ownership basis.

ELLIOT, JOHN WILLIAM. A Study to Identify the Competencies in Farm Management Needed by Western Spokane County Farmers. Thesis, M.S., 1969, Washington State University. 75 p. Washington State University, Pullman.

Purpose. -- The purpose of the study was to determine what competencies farmers say they need in farm management.

The following are specific questions which the study attempted to answer:

1. What skills and knowledge do farmers think are needed to be successful in farm management?

2. What skills and abilities are now used by farmers in farm management?

Method. -- A questionnaire was used to collect data by the personal interview method. The questionnaire was in three parts. Part A was concerned with abilities needed to be a successful farm manager. Part B consisted of farm profile type questions. Part C was concerned with management practices performed by the farmer. Parts A and C were divided into five categories comprised of similar questions for ease of comparison. These categories were financial abilities, planning abilities, securing information abilities, crop enterprise abilities, and livestock enterprise abilities.

Findings. -- The abilities needed for successful farm management that seemed most apparent by noting the difference between the scores of abilities performed and abilities needed should be included in the course of study for an adult farm management program. These abilities are:

1. Filing accurate income tax returns.

2. Figuring the rate of return per dollar invested.

3. Figuring total livestock costs per pound marketed or gained.

4. Determining livestock returns per acre.

5. Figuring livestock returns per pound gained or marketed.

6. Figuring livestock feed returns per $100 feed fed.

7. Figuring a budget for livestock.

8. Keeping accurate business records.

FLOCH, VADEN F. A Survey to Determine the Need for Vocational Agriculture at Lewiston High School. Thesis, M.S., 1969, Washington State University. 41 p. Washington State University, Pullman.

Purpose. -- The purpose of this study was to determine the need for a vocational agriculture program at Lewiston High School, Lewiston, Idaho.

Method. -- The data for this survey was secured through the use of:

1. A questionnaire mailed to the Lewiston High School male graduates of 1959.
2. A questionnaire administered by personal interview to agricultural businessmen in the Lewiston area.
3. A questionnaire mailed to Lewiston area farmers.
4. A questionnaire administered to Lewiston High School male students.
5. A questionnaire mailed to local and state school administrators and supervisors.

Findings. -- The findings from the survey show that few full-time agricultural production jobs are available in the Lewiston area. However, agriculturally related jobs are predicted to increase significantly in the next 5-year period.

Over 20 per cent of the Lewiston High School students indicated that they would enroll in vocational agriculture if it were offered. All of the groups surveyed agreed that there is a need for Vocational Agriculture at Lewiston High School.

The survey concludes that Vocational Agriculture should be incorporated into the Lewiston High School curriculum on the basis of evidence presented.

GARVER, DAN EDWARD. Factors Associated With Students Dropping From and Staying in Vocational Agriculture Programs. Problem, M. Ag. Ed., 1969, University of Arizona. 123pp. Department of Agricultural Education, University of Arizona.

Purpose. -- The purpose of the study was to determine the factors associated with students who dropped from and stayed in vocational agriculture after their first year in the vocational agriculture program.

Method. -- Randomly selected students who had been enrolled in vocational agriculture in Arizona high schools the school year preceeding the school year of the study were personally interviewed by the researcher to gather personal and situational data on students who had dropped from and students who had stayed in vocational agriculture after their first year in the vocational agriculture program. The permanent school records of these students were reviewed by the researcher following the individual interviews to gather intimate personal data on the students.

The personal and situational data were gathered on a synthesized list of personal and situational factos developed by the researcher to be included in the study.

The data on the two groups of students were compared to determine which personal and situational factors were associated with student attrition from vocational agriculture after their first year in the vocational agriculture program and which personal and situational factors were associated with students staying in vocational agriculture for the second year.

Findings. -- The personal factors associated with students dropping from vocational agriculture were older age, larger families, vocational interests not in agriculture, low intelligence quotient scores and low reading percentile ratings.

The personal factors associated with students staying in vocational agriculture were younger age, smaller families, vocational interests in agriculture and intelligence quotient scores in the range of 100-120.

The situational factors associated with students dropping from vocational agriculture were participation in sports, low quality occupational experience programs that were not supervised by the vocational agriculture teacher and little interest and participation in F. F. A.

The situational factors associated with students staying in vocational agriculture were the continuance of specialized programs in vocational agriculture, high quality occupational experience programs that the students' parents encouraged them to conduct and interest and participation in F. F. A.

HALL, FRANK L. Evaluation of Vocational Agriculture Courses Taught at Emery County High School. Thesis, M.S., 1969, Utah State University. 67 p. Utah State University, Logan.

Purpose. -- The study was to determine which phase of vocational agriculture programs was most meaningful to former students of the Emery County High School; and to determine the values of occupational endeav of former vocational agriculture students from 1962 to 1968 inclusive. study was to evaluate and revise present curriculum to meet the needs of future enrollees.

Method. -- Questionaires were sent to 138 former students of the school to evaluate curriculum in vocational agriculture. It was to be determined the values and needs of present curriculum in the evaluation of experience and present occupation.

Findings. -- The areas of study ranked highest were FFA, Agricultural Mechanics, Livestock Farming, and Agricultural Economics. Those of lesser significance were Crop Production, Agri-Business and Ornamental Horticulture. (1) Of the total evaluation of the agriculture curriculum, 86.23 percent of the former students indicated it was of value to them while 13.77 percent indicated it to be of no value. (2) Returns indicated that the FFA program was filling the need of the majority of the former students in their development of leadership and citizenship training and was appreciated by those employed outside the agricultural field as well as those within. (3) Returns showed that knowledge and skills acquired by enrollees of vocational agriculture were beneficial to many not employed in the area of agriculture. (4) The report revealed a lack of depth of materials taught in the areas of ornamental horticulture and agri-business. (5) The results of this study indicate a need for continual revision and evaluation of the course of study. (6) Opportunities and instruction in farm related occupations should be stressed. (7) It was found that 23.11 percent of the former vocational agriculture students included in this study were engaged in farming or off-farm related occupations. (8) Approximately one-half of the above students are engaged in actual farming enterprises, nearly three-sixteenth in a non-professional agriculture related areas, and about one-third are in college studying agriculture. (9) There were forty-six of the former students employed in non-agricultural occupations. (10) Of the forty-six former students in college, there were thirty-six studying in non-related agriculture fields.

HAMILTON, JAMES B. Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona - Santa Cruz Valley Union High School District. 1969. A Research Project of the Department of Agricultural Education, Report 255, Agricultural Experiment Station, 37 p. Department of Agricultural Education, University of Arizona, Tucson.

Purpose. -- This study is one of a series of studies being conducted in order to obtain a comprehensive analysis of the total field of agricultural occupations in Arizona. Both on-farm and off-farm agricultural occupations are being studied to determine employment opportunities and training needs in the broad spectrum of agricultural occupations.

Method. -- Personal interviews were conducted in each agricultural firm in the school district, in both production businesses and off-farm agricultural businesses, to identify existing and anticipated agricultural occupations, to determine the numbers of people employed, and to determine the agricultural competencies needed to perform the duties of each agricultural occupation.

Findings. -- 729 persons were employed in 39 different job titles in the 66 agricultural firms identified in the school district. Of the 66 firms identified, 40 were engaged in crops production only and employed nearly three-fourths of the full-time agricultural employees in the district.

The following three major clusters of agricultural occupations were identified based upon similar patterns of agricultural competencies needed to perform the duties of the occupations: (1) a cluster of manager and foreman occupations, (2) a cluster of agricultural mechanics occupations, and (3) a cluster of tractor drivers, general farm hands and irrigators.

Agricultural competencies needed by the greatest numbers of employees were competencies in the areas of agricultural mechanics, field crops production, and agricultural business management.

Selected characteristics of employees and occupations are also reported.

HARDY, DUANE M. The Prevention of Accidents in the Agricultural Mechanics Shops in Wyoming. Thesis, M.S., 1969, Utah State University. 56 p. Utah State University, Logan.

Purpose. -- The study was to determine what methods, practices, and devices were being used by teachers for conducting an agricultural mechanics safety program in the shops of Wyoming.

Method. -- Questionnaires were sent to 53 teachers of vocational agriculture in the state of Wyoming. Fifty-one responses were returned and the data compiled was for this study.

Findings. -- (1) Proper instruction before operating shop equipment and demonstration of safety practices along with written safety regulations was presented. Definite rules for shop management and clean-up should be enforced. (2) Many different types of injuries occurred in agricultural mechanics shops. (3) Most injuries occuring in agricultural mechanics shops were burns of minor nature. (4) A sufficient number of accidents occurred to warrant the use of better education on safety and the enforcement of good practices and procedures. (5) Most all accidents were caused by human error; therefore, most of the accidents could have been prevented or minimized. (6) Lack of concentration was the personal factor most often associated with accidents in agricultural mechanics shops. The physical factor contributing most to the accidents was improper wearing apparel. (7) Proportionally more of the serious and severe accidents occurred in the agricultural mechanics shops was items other than hand and power tools. (8) Some teachers did not have adequate fire fighting equipment in their shops. (9) The difficulties most often encountered in getting students to use eye protection devices were inconvenience, discomfort, and lack of concern. (10) Adequate first-aid supplies were not possessed by teachers of agricultural mechanics. (11) There is need for more undergraduate and in-service training in shop safety. (12) Scheduled, systematic safety inspections of shops are effective in reducing shop accidents.

JOHNSON, FRANKLIN R., JR. Placement Opportunities in Ornamental Horticulture in the Windsor Area. Master's Report, 1969. Colorado State University. 83 p. Department of Vocational Education, Colorado State University, Fort Collins, Colorado.

Purpose. -- To investigate the placement opportunities and implications for student training programs in ornamental horticulture in the Fort Collins, Greeley, Loveland, and Windsor areas.

Method. -- The respondents indicated they were involved in many different ornamental horticulture functions with floriculture the most important primary function.

A majority, 57.0 per cent, of the firms employed from one to three employees full-time with an almost equal ratio of males to females.

Over half of the full-time employees, 55 out of 103, were considered skilled in their field. It was found that 38.2 per cent of all skilled workers were in floral design. Also it was found that flowers and sales were of primary importance to most businesses, followed by landscaping and nurseries.

Part-time employment was expected to increase 86.6 per cent in the next five years, and full-time employment was expected to increase 55.4 per cent in the same period.

The most common type of training programs provided by the ornamental horticulture firms was informal on-the-job training.

Twelve, or 57.1 per cent, of the firms indicated that the schools could offer training that would be of a benefit to persons desiring entry into and success in the ornamental horticulture field.

The most common areas of training desired by the ornamental horticulture firms for prospective employees was transplanting, grafting, budding, and pruning; plant nutrients; insect and disease prevention; soils, fertilizing, testing, and sterilization; ornamental trees and shrubs; and landscaping.

It was found that 12, or 57.1 per cent, of the firms indicated that they would be willing to provide training stations in cooperation with the public schools.

The results of this study indicated that 20 male students and six female students could be placed annually in cooperative work stations in the ornamental horticulture firms.

KIRKBRIDE, KEITH FRANK. A Study to Identify Vocational Competencies Needed for Employment in the Grain, Feed, Seed, and Farm Supply Industries in the Area of Spokane, Washington. Thesis, M.S., 1969, Washington State University. 55 p. Washington State University, Pullman.

Purpose. -- The purpose of this study was to identify the degree of achievement of certain vocational competencies needed for employment in the grain, feed, seed, and farm supply industries and to develop a curriculum for a community college which would best meet the needs of students for employment in these industries.

Method. -- A form designed for personal interviews was used to gather data from managers of businesses operating in the general category of grain, feed, seed, or farm supply. Each competency listed in the questionnaire was rated as to its relative importance for the positions of managers, supervisors, field agents, and mill operators. The respondent was asked in each case to rate the competencies for the particular position as either "Essential," "Necessary," "Desirable," or "Limited Value."

Findings. -- Sixty-five competencies were rated by 31 managers for the degree of achievement needed for employment in the grain, feed, seed, and farm supply businesses. Data compiled indicated that a higher degree of achievement was needed for business and distributive competencies than for agricultural competencies. Competencies were rated higher for managers and field agents than for supervisors and mill operators.

Knowledge, skills, and abilities which were determined as "essential" or "necessary" by respondents were used in preparing a proposed two-year posthigh school curriculum. The program includes, besides class room instruction, a period of work experience in the related businesses. This two-year cooperative vocational program was designed to prepare people for employment in grain, feed, seed, and farm supply industries.

LITLE, JIM. Technician Needs In Forestry, Conservation And Natural Resources In Colorado And The Rocky Mountain Region. Master's Report, 1969, Colorado State University. 97 p. Department of Vocational Education, Colorado State University, Fort Collins, Colorado.

Purpose. -- To determine if there was a need for establishing educational programs in Colorado designed to train technicians in the areas of forestry, conservation and natural resources.

Findings. -- There were only 849 full-time employees doing technical level work in Colorado during 1966.

Between 1963 and 1968 the annual turnover rate of full-time technician employees was 33.6 per cent.

Trained technicians were preferred by the agencies and institutions.

The engineering, physical science and recreation categories showed the greatest need for technicians.

Very few professionals were performing technician level work.

Only 300 technician level employees were expected to be needed in 1970 and 291 in 1975.

Agencies and institutions preferred to hire technicians out of public school training programs.

Technician level employees were secured by the applicant's dropping in by 55 per cent of the employers.

Fringe benefits were provided by all agencies and institutions.

A Junior College or technical school background was preferred by the majority of employers.

Only a slight majority of agencies and institutions indicated a preference for their technician to possess an agricultural background.

Newly trained technicians may expect to obtain between $5,000 and $6,000 annually.

Seventy-seven per cent of the agencies and institutions provided on-the-job training as a means of in-service education.

Agencies and institutions were willing to cooperate with the public school training program.

Agencies and institutions did not agree on a desired pattern for a training program. Nine months in school and three months on-the-job was desired by 44.4 per cent of the employers.

LUSK, LARRY D. Factors Influencing Agriculture Students In Relation To Agriculture Occupations. Master's Report, 1969, Colorado State University. 109 p. Department of Vocational Education, Colorado State University, Fort Collins, Colorado.

Purpose. -- To analyze and identify the factors influencing occupational choices of vocational agriculture students.

Findings. -- There were 65.2 per cent of the students that indicated they planned to enter an agricultural related occupation. Another 20.2 per cent of the students indicated they had not determined which occupation they planned to enter but would prefer to enter an agricultural related occupation making a total of 85.4 per cent of the students who indicated they would prefer to enter an agricultural related occupation.

The sources which had the most influence on the students' occupational choice were parents, observed worker on the job, the vocational agriculture instructor and read about it.

Guidance counselors, non-agricultural teachers, radio and television and principals did not greatly influence the occupational choice of vocational agriculture students in any of the 32 selected jobs.

The jobs that the greatest number of students indicated they had learned about from observing worker on the job, vocational agriculture instructor, parents and friends were jobs that were in almost every case closely related to the farm. The jobs that the greatest number of students indicated they had knowledge of and had an interest in were jobs closely related to the farm.

Students did not have accurate knowledge of the salaries or the opportunity to enter agricultural related occupations.

MORTENSEN, JAMES H. Guidelines for Organizing Advisory Councils in North Dakota. Master's Report, 1969. Colorado State University. 131 p. Department of Vocational Education, Colorado State University, Fort Collins.

Purpose. -- To determine the organizational structure and functions of vocational agriculture advisory councils and to establish guidelines for organizing effective department advisory councils in North Dakota.

Method. -- Data were obtained from vocational agriculture instructors and advisory council members in North Dakota by means of a mailed questionnaire.

Findings. -- There were 65 vocational agriculture departments in North Dakota and only nine of the departments had an advisory council in operation.

A vast majority of the advisory councils were loosely structured organizations. Only one of the nine advisory councils had a written constitution and a system for rotating membership on the council.

The typical council met three or fewer times yearly and had eight or fewer members.

The experienced vocational agriculture instructors, those with eight or more years of experience, used advisory councils in a much greater proportion than did the less experienced instructors.

Important organizational techniques to be employed were to: secure approval for the advisory council from the superintendent and board of education; elect and utilize a president, vice president, and secretary; schedule regular meetings and develop purposeful agenda; use subcommittees; give council an important function to perform; and orient members and officers.

Important activities for the vocational agriculture instructor were to: discuss council formation with administrator and secure approval from the board of education; assist in the selection of members; orient new members; request advice and utilize suggestions; recognize members for their accomplishments; maintain a file of minutes; serve as chairman at organizational meeting; and serve refreshments.

Public relations, sponsoring adult classes, evaluating existing programs, developing long time goals, determining community needs, helping prepare local philosophies of vocational agriculture education, and recommending department policies were considered important functions of an advisory council.

NELSON, ARTHUR. A Study of the Vocational Needs of Students in the Skagit and Island County Schools. Thesis, M.S., 1969, Washington State University. 99 p. Washington State University, Pullman.

Purpose. -- The purpose of this study was to identify the vocational education needs of the students in Skagit and Island County schools.

Method. -- Data were gathered by means of personal interviews and written questionnaires involving vocational instructors, state supervisors, vocational administrators, and employers.

Findings. -- The writer concluded that much can be done in the total school structure to improve vocational education. Not enough emphasis is given to preparing people for work. Advisory committees have not been established in most schools, and the vocational guidance programs as they exist are inadequate.

The need was evident for closer relationship among kindergarten through grade twelve, community college and area vocational-technical school, four-year colleges, labor and management of the business world, and other representatives of the community.

Certain subject areas on the basis of questionnaire results are indicated to be most important to employment. They are English, grammar, writing, work experience, business math, mechanics, speech, public relations, salesmanship-merchandising, and shop math.

Vocational education encompasses a broad area and involves the total individual. The best communication and understanding are necessary by parents, teachers, students, and staff to do the most effective job.

NIELSON, PHIL WARREN. Vocational Competencies Needed by Fieldmen in Selected Agricultural Supply Businesses. Research Problem, M.Ag.Ed., 1969, University of Arizona. 128 p. Agricultural Education Library, University of Arizona, Tucson.

Purpose. -- The purpose of this study was to determine the vocational competencies needed by fieldmen in selected agricultural supply businesses located in Southeastern Arizona with implication for vocational-technical training programs.

Method. -- A random sample of agricultural supply businesses fieldment in Southeastern Arizona was selected. Data were collected through the use of occupational analyses by observation; competency check sheet completed by the observer; and a questionnaire filled out by the fieldmen. Using the competency check sheet, essential vocational competencies (knowledge and ability) in the technical area were determined separately for fieldmen selling agricultural chemicals, fertilizers and feeds.)

Findings. -- It was found that fieldmen in selected agricultural supply businesses in Southeastern Arizona handled mainly either feeds or agricultural chemicals-fertilizers, with the majority handling the latter. Vocational competencies were categorized into common abilities and understandings. Common abilities were clustered into the following functions: oral communications, equipment and material handling, human relations, business management, sales promotion and self improvement. Common understandings of agricultural chemical-fertilizer fieldmen were in the following categories: pest control, crop production practices, soil-water management and application equipment. Feed fieldmen had common understandings associated with the products they sold. Some technical and general understandings were found common to all fieldmen. A training program for agricultural supply business fieldmen was formulated using the findings of this study. It contained the following recommendations: (1) a three year program set up in a vocational-technical college; (2) courses in technical product areas, common agricultural areas, and sales-human relations areas, with a track for feed and for agricultural chemical-fertilizer trainees; and (3) cooperative work experience in production agriculture and in agricultural supply businesses.

PHILLIPS, LOREN J. An Evaluation of Curriculum in Vocational Agriculture for Secondary Schools in Utah County. Thesis, M.S., 1969, Utah State University. 75 p. Utah State University, Logan.

Purpose. -- The study was to examine the current curriculum in vocational agriculture in Utah County secondary schools to determine adequacy of course content, functional value and recommended changes.

Method. -- Questionaires were sent to former students from the eight high schools of Utah County to be used in this survey. Those surveyed were selected at random: fifteen from each of the eight high schools. A letter explaining the purposes of the survey and a copy of the instrument was sent to each student. The survey instrument and accompanying letter was also mailed to 14 teachers of agriculture, 22 principals, superintendents, secondary supervisors and vocational counselors. The instrument was mailed to 28 vocational agriculture teachers in various sections of the state by random selection. The questionaire listing 69 subject areas in vocational agriculture was organized into eight curriculum groups for evaluation.

Findings. -- The traditional production courses of vocational agriculture are in need of curriculum revision if we are to meet the needs of current agriculture. Vocational counseling and advisory committees are needed to offer assistance and direction to vocational programs. Replies indicate teacher preparation is a factor in determining curriculum. It should be pointed out that there was not complete agreement of a possible course content for vocational agriculture from all groups included in this study. In determining possible course direction for vocational agriculture of Utah County it would appear that the areas ranked most important by all groups queried in this study would be a possible starting point for course content.

POTTER, THEODORE LEE. A Comparison of the Agricultural Mechanics Instructional Programs of Selected Washington High Schools to a Model Program. Thesis, M.S., 1969, Washington State University. 81 p. Washington State University, Pullman.

Purpose. -- The purpose of this study was twofold: (1) to compare the agricultural mechanics programs of selected Washington vocational agriculture departments to a model program, and (2) to make recommendations for improvements in agricultural mechanics instruction in Washington vocational agriculture departments. In addition to these general purposes, this researcher endeavored to determine the optimal amount of time that should be allotted to agricultural mechanics.

Methods. -- Two sets of questionnaires were developed with each listing the same agricultural mechanics areas of instruction. One set of questionnaires was sent to a jury of 13 experts in the fields of agricultural engineering and agricultural education. The other set of questionnaires was sent to selected groups of Washington vocational agriculture teachers.

The questionnaire developed for the jury used a scale of five to one to indicate the importance each jury member placed on each area of instruction. Two model programs were developed based on responses from the jury. Model One was comprised of those areas of instruction considered highly important to any agricultural mechanics program, while Model Two included those areas of instruction considered necessary for a good program as indicated by the jury.

The questionnaire developed for the teachers used a scale of five to one to indicate the importance of each area of instruction in each teacher's program.

Findings. -- When the programs studies were compared to the jury's model programs, it appeared that Washington vocational agriculture teachers are doing a good job of agricultural mechanics instruction. The basis for this conclusion was that the average number of teachers including each area of instruction from Models One and Two was 85.4 per cent and 77.4 per cent respectively. One exception to this was an apparent weakness in the Agricultural Power and Equipment division of instruction. The number of teachers including the various areas of instruction from this division ranged from 62.9 per cent to 74.3 per cent in Model One.

It was recommended that Washington vocational agriculture teachers balance their programs to include more of the Agricultural Power and Equipment areas of instruction.

SAWYER, RICHARD CLAIR. A Program of Instruction for Agricultural Machinery Operation and Irrigation for Youth with Special Needs at the High School Level. Research Report, M. Ag. Ed., 1969, University of Arizona. 106p. Department of Agricultural Education, University of Arizona, Tucson.

Purpose. -- To develop a program of instruction for agricultural machinery operation and irrigation for youth with special needs at the high school level.

Method. -- Occupational analysis was utilized to determine the competencies needed by general farmhands, tractor operators, and irrigators to perform their jobs. The occupational analysis consisted of an interview with the employee, an interview with the supervisor, and observation of the employee. Using the competencies thus identified and a research of the literature, a course guide was developed including the competencies needed, suggested teaching-learning activities, guidelines for program development and guidelines for evaluation.

Findings. -- General farmhands were found to need more competencies than either tractor operators or irrigators. The irrigator was found to only need those competencies associated with irrigation. The tractor operator was found to need those competencies associated with operating and performing preventive maintenance of tractors and agricultural machinery. The general farmhand was found to need those competencies needed by both tractor operators and by irrigators. In addition, the general farmhand was found to need those competencies associated with specialized maintenance, adjustment and repair of tractors and agricultural machinery and those competencies associated with basic shop skills.

SOBRINHO, FAUSTINO DE ALBURQUERQUE. Training Needs of County Agricultural Extension Agents in Ceara, Brazil. Problem, M.Ag.Ed., 1969, University of Arizona. 86 pages. Department of Agricultural Education, University of Arizona, Tucson.

Purpose. -- The main purpose was to make an analysis of the educational needs of the county agricultural extension agents in the State of Ceara, Brazil.

The objectives were: (1) to determine if training was received by county agricultural agents in specific training items within the eight general areas of extension work: (2) the relative degree of educational training needed in the same specified training items, and (3) to identify the selected training items for specialized and in-service training programs as expressed by the county agent's personal interests.

Method. -- Data were collected by a questionnaire completed in group meeting by 75 of the 90 county extension agents in Ceara, Brazil. Two assistant professors from the College of Agriculture of the Federal University of Ceara personally administered the questionnaires to the agents in the group meetings.

Findings. -- Ceara agricultural extension agents identified 58 or 52.2 percent of the 111 items of training included in the eight general areas of extension work as having a high rate of training needs.

The agents ranked "knowledge about economic development", "technical agriculture subject matter", and "research and evaluation", as the top three general areas in which they needed the greatest amount of training.

All items in the general area of "economic development" were indicated by the agents as having a high rate of training needed.

In the general area of "technical agriculture subject matter" the respondents identified 74.4 percent of the total number of training items and 55.5 percent in the area of "research and evaluation" as items of high rate of training needed.

"Program planning", "performance of educational activities", and "knowledge about the extension service" were the three general areas identified by the agents as having the lowest rate of training needed.

It was found in all of the general areas considered in this study that different types of association existed between mean score of training needed and the number of trained agents.

STRITZKE, ERVIN JOHN. A Comparison of Vocational Funds Received and Expended and the Instructional Programs Offered in Selected School Districts Prior to and Subsequent to the Passage of the 1963 Vocational Education Act. Thesis, M.S., 1969, Washington State University. 59 p. Washington State University, Pullman.

Purpose. -- The purpose of this study was to compare financial and curricular changes that have occurred in six selected high schools offering vocational agriculture as part of their program, and to make a comparative study of the amount of funds spent in these vocational agriculture departments.

The study was designed to obtain data that would help answer the following questions:

1. Has there been a percentage increase in the total school funds spent on vocational agriculture education since the passage of the 1963 Vocational Education Act as compared to the percentage of school funds spent in previous years?

2. Is there a definite relationship between the amount of federal funds spent and the quality of vocational agriculture facilities and equipment available?

3. Has there been a significant change in the vocational agriculture curriculum since 1963?

Method. -- Information was obtained through personal interviews, personal investigations of school district vouchers, and letters of inquiry to teachers of agriculture.

Findings. -- The findings showed that there was an increase in the total budget spent on agriculture for the second year of the study and a decrease for the third year of the study.

There is a relationship between the amount of federal money spent and the quantity and quality of equipment available to vocational agriculture departments.

There has been a change in the vocational agriculture curriculum since 1963, through the addition of 50 units of instruction.

TADLOCK, LARRY EUGENE. Effect of Growth Media on Yield and Certain Quality Characteristics of Greenhouse Tomatoes. Thesis, M.A., 1969, New Mexico State University. 41 p. Agricultural and Extension Education Department, New Mexico State University.

Purpose. -- The purpose of this study was to determine the "Effects of Growth Media on Yield and Quality Characteristics of Greenhouse Tomatoes."

Method. -- Seedlings sown in vermiculite flats were transplanted into the greenhouse pots. The first 10 days after the plants were set into beds, they were watered individually, each day. Three minerals were added to all plants growing in the artificial media. Clusters with open flowers were vibrated daily and pollination from the first appearance. A final comparison was made of total yield from the three media used.

Findings. -- Volcanic Ash media tended to produce a higher cull percentage, smaller fruits, and lower yields than the plants grown in with the pete-lite or soil media. Based on experimental analysis and statistical analysis, it was evident that the pete-lite medium is capable of producing an excellent tomato crop. Evidence derived from this experiment indicates that crops produced in pete-lite compare favorably with crops grown in the soil.

TALLEY, CURTIS H. The Need for Agricultural Training of Young and Adult Farmers in the Palisade-Grand Junction Community. Master's report, 1969. Colorado State University. 109 p. Department of Vocational Education, Colorado State University, Fort Collins.

Purpose. -- To determine the interest in, and need for a long time planned program of systematic instruction for young and adult farmers of the Palisade-Grand Junction, Colorado area.

Method. -- Data were obtained from young and adult farmers in the designated area of the study through responses to a questionnaire.

Findings. -- There was an average of 16 years of farming experience, 10 percent were under 35 years of age with an average of 12.4 years of education.

Ninety-three percent owned their land, 62.9 percent were part-time, and 34.2 percent were full-time farmers.

There were 1216 acres of land in fruit production with 93 percent planted to peaches, pears and apples.

There were only 128 acres planted to field crops and only 215 head of livestock cared for.

Areas of interest and need for educational programs included peaches, pears, apples, income tax, farm law, record keeping, social security, tractor maintenance and repair, electric arc welding, equipment maintenance and repair, and oxy-acetylene welding.

Areas of no interest and need were livestock and field crops.

Frequency of meetings preferred were 1 class per week for 10 weeks or 2 classes per week for 5 weeks.

Times of day preferred for meetings were 7:00 to 9:00 p.m. or 7:30 to 9:30 p.m. on Monday or Tuesday, to begin from November 1 to January 1.

Sixty-seven percent of the farmers indicated an interest in attending an adult class.

Factors that would influence attendance were church, civic and social obligations, chronic health problems, and off-farm work in the evening.

WILBERT, GOODLUCK GILBERT. Effects of N-Dimethyl Amino Succinamic Acid (Alar) On Vegetative Growth Of Chile Pepper (Capsicum Frutescens L.) Plants. Thesis, M.S., 1968, New Mexico State University. 40 p Agricultural and Extension Education Department, New Mexico State University.

Purpose. -- The purpose of the study was to obtain information on the effects of Alar Concentration on the vegetation growth of chili pepper in greenhouse grown potted plants.

Method. -- The pots were arranged in five blocks of nine pots each. Alar Concentration of 0, 25, 250, 500, 1000, 2000, 4000, 6000, 8000, and 10,000 ppm (per million) and distilled water were prepared. Spray application of each concentration was made with a small mist type spray. There were eight treatments of Alar Concentrate and one check per block, totalling 45 experimental units each containing two observational units.

Findings. -- Treatment effects on plant height was apparent but not significant seven days after applying the growth retardant. Alar tends to modify the intermediate growth appearance of chile pepper plant by its suppression of elongation number of stem internodes and branches.

RESEARCH STUDIES IN PROGRESS

ADAMS, LESLIE R. A Study to Determine the Need for Cooperative Occupational Experience Programs in the Kennewick School District. Thesis, M.S., Agricultural Education, Washington State University.

AMBERSON, MAX L. Vocational Education Information Program. Staff Study, Department of Agricultural Education, Montana State University.

AMATOR, FRED L. Development of an Instructional Module Approach for the Utilization of Land-Livestock Laboratories. Master's study. Department of Agricultural Education, University of Arizona.

BARINGER, JOHN ROBERT. An Analysis of Montana's 4-H County Camping Programs. Master's Report, Department of Agricultural Education, Montana State University.

BOLZ, DARRELL G. A Study to Determine the Feasibility of a Vocational Agriculture Adult Farm Management Program in Idaho. Thesis, M.S., Department of Agricultural Education, University of Idaho.

BOLZ, DARRELL G. and KINDSCHY, DWIGHT L. A Survey of the References Used by Vocational Agricultural Teachers in Idaho. Staff study, Department of Agricultural Education, University of Idaho.

BRITTON, ROBERT L. Value and Use of School Land Laboratories in Colorado. Master's Report, Department of Vocational Education, Colorado State University.

CHRISTENSEN, KENNETH WYNN. Selected Still Projection Materials Available for Teaching Agricultural Mechanics with Emphasis and Evaluation on Electricity. Thesis, M.S., Department of Agricultural Education, Utah State University.

FRITZ, GAREY DALE. Identification of Agri-Business Needs in the Billings Trade Area. Master's Report, Department of Agricultural Education, Montana State University.

HAMILTON, JAMES B. Occupational Opportunities and Training Needs for Agricultural Employment in Selected Areas of Arizona. Department of Agricultural Education and the Agricultural Experiment Station, University of Arizona.

JACOBS, CLINTON E. The Development and Evaluation of Instructional Units for Teaching Principles of Internal Combustion Engines. Department of Agricultural Education, University of Arizona.

LUFT, VERNON DALE. Determining the Need for Special Programs of Vocational Agriculture for the Disadvantaged or Handicapped Students in Montana. Master's Report, Department of Agricultural Education, Montana State University.

McCORMICK, FLOYD G. The Development and Evaluation of Instructional Units for Teaching Principles of Agricultural Science. Department of Agricultural Education and the Agricultural Experiment Station, University of Arizona.

MERRILL, FRED K. A Study to Determine the Vocation Retraining Needs of Adults in the Chewelah Area. Thesis, M.S., Agricultural Education, Washington State University.

MILHOLLAND, KENNETH D. A Feasibility Study to Determine the Need for a Farrier's School in Western Washington. Thesis, M.S., Agricultural Education, Washington State University.

MYERS, ALAN H. Adult Farmer Educational Programs and the Extent of Farmer Participation. Master's Report, Department of Vocational Education, Colorado State University.

PHILLIPS, JAMES DAVID. A Survey of the Agricultural Extension Scheme in West Godavari District, Andhra Pradesh, India. Master's Report, Department of Agricultural Education, Montana State University.

PRUETT, LEONARD T. Educational Interests and Needs of Adult Farmers in Colorado. Master's Report, Department of Vocational Education, Colorado State University.

REYNOLDS, ELDON R. An Evaluation of the Pre-Service Program in Agricultural Education at Colorado State University. Master's Report, Department of Vocational Education, Colorado State University.

RICKS, DAVID GENE. Teachers Guide Agricultural Electricity. Thesis, M.S., Department of Agricultural Educatio., Utah State University.

WILLIAMS, ELLIS E. A Study of Community Development Activities in an Eight County South Central Montana Area. Master's Report, Department of Agricultural Education, Montana State University.

CHRISTENSEN, HOWARD H. A Study to Determine Needed Improvements in Vocational-Technical Programs for Boys in Nine Nevada High Schools.

SUBJECT INDEX: SUMMARIES OF STUDIES 1968-69

Administration and Supervision: 2, 22

Advisory Councils: 15

Curriculum Development: 12, 17

Educational Programs

- Adult and Continuing Education: 24
- Agricultural Mechanics Programs: 19, 20
- Cooperative Extension Education: 21
- Programs for High School Students: 6
- Programs for Students with Special Needs: 20
- Safety Program: 10
- Technical Education: 1, 13, 23, 25

Evaluation

- Curriculum: 18
- General: 8

Farm Management: 4, 5, 3

Guidance and Counseling:

- General: 7
- Occupational Choice: 14
- Vocational Education Needs: 16

Manpower Needs and Employment Opportunities

- General: 9
- Nonfarm Occupations: 11, 12